

REMARKS

Claims 1-31, 52, and 54-59 are pending in the application. Applicant expresses appreciation for the allowance of claims 3-5 and 56-59 and for the indication that claims 8-15 and 24-31 set forth allowable subject matter.

Applicant herein incorporates by reference the complete remarks presented in the Response to November 19, 2003 Office Action and provides the below indicated additional remarks responsive to the Advisory Action.

In a March 16, 2004 telephone conference, Examiner Le and Applicant's attorney, James Lake, discussed the content of the Advisory Action. Applicant reiterated some of the remarks from the Response to November 19, 2003 Office Action and addressed each of the three reasons raised in the Advisory Action as allegedly justifying continued rejection of some claims. The content of Applicant's additional remarks is summarized below. It was Applicant's understanding after the telephone conference that Examiner Le and the Supervisory Patent Examiner viewed Applicant's arguments as "strong" and would fully reconsider the rejections upon filing of an RCE.

The Advisory Action alleges that Applicant has not provided "any convincing data" to support the assertion that La_2O_3 will not function properly as top dielectric layer 120 in the Bai device. The Advisory Action alleges that Callegari teaches the suitability of La_2O_3 "as high-k dielectric material" substituted for PZT as prima facie obvious. The Advisory Action further states that substitution of equivalents does not require express motivation as long as the prior art recognizes the equivalency. Applicant traverses each of the three allegations.

It is clear from MPEP 2144.06 that relying on equivalence as a rationale supporting an obviousness rejection requires recognition in the art of equivalence for

the same purpose. Column 4, lines 47-67 of Callegari disclose that dielectric material 14 may be La_2O_3 , BST, or PZT. However, regardless of whether La_2O_3 and PZT are equivalent dielectric materials, Callegari does not disclose or suggest La_2O_3 as an equivalent material for top dielectric layer 120 in Bai.

Paragraphs [0019] and [0026] of Bai describe that top dielectric layer 120 is not merely a dielectric material, but is additionally a block to leakage current. Accordingly, a finding of equivalence requires that the art show La_2O_3 is equivalent to PZT or BST as a dielectric material as well as a leakage current block. Bai requires that top dielectric layer 120 functions as a block to leakage current through bottom dielectric layer 130 without adding to the equivalent thickness of gate dielectric 140 and contributing to the production of fringe electric field. Equivalence only exists in establishing obviousness if the materials are equivalent for the same purpose. Applicant asserts that the Office has not alleged and Callegari does not disclose that La_2O_3 is equivalent to BST or PZT for the purpose described in Bai of blocking leakage current without adding to the equivalent thickness of gate dielectric 140 and contributing to the production of a fringe electric field. At least for such reason, the cited references cannot be properly combined.

With regard to the Office's three allegations in the Advisory Action, Applicant asserts, first, that the Bai reference itself provides ample convincing data to support Applicant's assertion that La_2O_3 is not a proper top dielectric layer 120. The previous Response to November 19, 2003 Office Action outlines such support found in Bai. Also, as indicated above, the burden is upon the Office and not upon the Applicant to demonstrate that La_2O_3 will function properly as an equivalent for the same purpose as top dielectric layer 120.

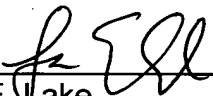
Second, as established above, it is not relevant that La_2O_3 and PZT are merely equivalent dielectric materials since La_2O_3 must be an equivalent top dielectric layer 120 to support prima facie obviousness. No support exists in the cited art that La_2O_3 blocks leakage current in a manner equivalent to PZT or BST. Accordingly, the materials are not equivalent for the same purpose.

Third, it is clear from MPEP 2144.06 that absence of an express suggestion to substitute one equivalent material for another is only excusable if Callegari were to disclose a material that is equivalent for the same purpose as described in Bai.

At least for the reasons asserted herein and in the previous Response to November 19, 2003 Office Action, claims 1-31, 52, and 54-59 are patentable, and Applicant requests allowance of such claims in the next Office Action.

Respectfully submitted,

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